

**REMARKS**

Claims 1, 5, 7, 8 and 14 have been amended to improve form, claim 6 has been canceled without prejudice or disclaimer and new claims 19-21 have been added. Claims 1-5 and 7-21 are now pending in this application.

The applicants acknowledge, with appreciation, the indication that claims 15-18 have been allowed

Claims 6 and 7 have been rejected under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential structural cooperative relationships of elements. In particular, the Office Action states that the gate dielectric and gate material being formed on four surfaces of a fin creates a problem since three surfaces of the active layer of an inverter are available for covering with any type of material, but the fourth surface is unreachable because it is positioned on another layer or substrate (Office Action – page 2). The applicants respectfully disagree.

As discussed in the applicants' specification at, for example, paragraphs 58-61, in one implementation, a dielectric film 610 may be grown on all four surfaces of fin 130, as illustrated in Fig. 6A. Gate material layer 620 may then be deposited adjacent dielectric film 610 on all four surfaces of fin 130, as also illustrated in Fig. 6A. Therefore, the applicants respectfully submit that the features recited in original claims 6 and 7 are supported by the disclosure and that there is no omitted structural cooperative relationship between elements. Accordingly, withdrawal of the rejection under 35 U.S.C. § 112, second paragraph is respectfully requested.

Claims 1-5 and 8-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Yeo et al. (U.S. Patent Publication No. 2004/011031; hereinafter Yeo). The rejection is respectfully traversed.

Claim 1, as amended, recites features similar to those in original claim 6, which was not rejected under 35 U.S.C. § 103 based on Yeo. In addition, the applicants note that the features recited in amended claim 6 are supported, for example, by the applicants' disclosure at paragraphs 58-61 and Fig. 6A. Therefore, withdrawal of the rejection and allowance of claim 1 are respectfully requested.

Claims 2-5 depend on claim 1 and are believed to be allowable for at least the reasons claim 1 is allowable. Accordingly, withdrawal of the rejection and allowance of claims 2-5 are respectfully requested.

Claim 7 is also dependent on claim 1 and is believed to be allowable for at least the reasons claim 1 is allowable. Accordingly, allowance of claim 7 is respectfully requested.

Claim 8 recites a semiconductor device that includes an insulating layer, a first device and a second device. Claim 8 recites that the first device includes a first fin having a first height and a first width and the second device includes a second fin having a second height and second width. Claim 8, as amended, recites that the first ratio (of the first height and first width) is selected to produce a first carrier mobility with respect to the first fin. Claim 8, as amended, also recites that the second ratio (of the second height and second width) is selected to produce a second carrier mobility with respect to the second fin. Yeo does not disclose or suggest these features.

Yeo may disclose an inverter that includes two transistors that have different

channel widths (Yeo – paragraph 41 and Fig. 6). Yeo, however, does not disclose or suggest that the ratio of the height and width of either P-channel transistor 72 or N-channel transistor 74 is selected to produce a first or second carrier mobility with respect to fin 76 in structure 70.

Yeo does mention carrier mobilities with respect to the fin. More particularly, Yeo discloses that the surface of fin 20 may be smoothed by subjecting the fin 20 to a sacrificial oxidation and/or silicon sidewall treatment (Yeo – page 5, paragraph 48 and Fig. 11C). Yeo further discloses that the surface smoothing of the fin sidewalls contributes to the achievement of good carrier mobilities (Yeo – page 5, paragraph 48). Yeo, however, does not disclose or suggest selecting ratios of any fins (e.g., fin 20 in Fig. 11C or fin 76 in Fig. 6) to achieve a particular carrier mobility. More particularly, Yeo does not disclose or suggest a first ratio (of height and width) for a first fin of a first device is selected to produce a first carrier mobility with respect to the first fin. Yeo further does not disclose or suggest a second ratio (of height and width) for a second fin of a second device is selected to produce a second carrier mobility with respect to the second fin.

For at least these reasons, Yeo does not disclose or suggest each of the features of amended claim 8. Accordingly, withdrawal of the rejection and allowance of claim 8 are respectfully requested.

Claims 9-14 depend on claim 8 and are believed to be allowable over Yeo for at least the reasons claim 8 is allowable. In addition, these claims recite additional features not disclosed or suggested by Yeo.

For example, claim 14 recites that the semiconductor device includes a third device having a third fin. Claim 14, as amended, recites that the third ratio (of a third height and third width of the third fin) is selected to produce a third carrier mobility with respect to the third fin and that the third carrier mobility is different from at least one of the first or second carrier mobilities.

Yeo, as discussed above, does not disclose or suggest that the ratios of height and width of any fins in Yeo are selected to produce any particular carrier mobility. Therefore, Yeo cannot disclose or suggest the features recited in amended claim 14.

For at least these additional reasons, withdrawal of the rejection and allowance of claim 14 are respectfully requested.

#### NEW CLAIMS

New claims 19-21 have been added. These claims are believed to be allowable over the art of record. For example, claim 19 is dependent on claim 1 and is believed to be allowable for at least the reasons claim 1 is allowable. In addition, claim 19 recites that the first and second fin aspect ratios are configured to produce first and second carrier mobilities for the first and second fins, respectively, and wherein the first and second carrier mobilities are different. The art of record does not disclose or suggest these features.

Claims 20 and 21 are dependent on claim 8 and are believed to be allowable for at least the reasons claim 8 is allowable. In addition, claim 20 recites that the first carrier mobility (with respect to the first fin) is different from the second carrier mobility (with respect to the second fin). The art of record does not disclose or suggest this feature.

Claim 21 recites that each of the first and second heights ranges from about 300 Å to about 1500 Å. The art of record does not disclose or suggest this feature.

Accordingly, allowance of claims 19-21 is respectfully requested.

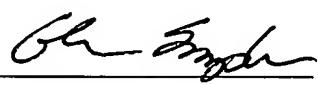
**CONCLUSION**

In view of the foregoing amendments and remarks, the applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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